REMARKS/ARGUMENTS

The present amendment is submitted in an earnest effort to advance the case to issue without delay.

Claim 3 was rejected under 35 U.S.C. § 112, second paragraph. The Examiner suggested an amendment which would overcome the rejection for vague and indefinite language. Applicants thank the Examiner and have included the suggested language into claim 3.

Claim 1 has been amended by including the further element of an alpha-hydroxycarboxylic acid. Support is found in the original specification at page 4, lines 9-10 and page 9 (lines 3-4). New claim 10 specifies that the alpha-hydroxycarboxylic acid is either glycolic, lactic or 2-hydroxyoctanoic acid. Support is found in the original specification at page 8 (lines 21-22). New claim 11 recites a further pH range. Support is found in the lower and upper limits of ranges in original claims 7 and 8, respectively.

Claims 1-9 were rejected under 35 U.S.C. § 103(a) as unpatentable over Williams (U.S. Patent 5,422,112) in view of Loffler et al. (InCosmetics, Dusseldorf) in view of Beerse et al. (U.S. Patent 6,294,186). Applicants traverse this rejection.

An objective of the present invention was to provide a thickening system which would be effective to provide aesthetic viscosity to alpha-hydroxycarboxylic acids. See the application at page 4, paragraph [00013]. Beyond building viscosity, the thickening system

of the present invention has a further advantage of stabilizing oil-in-water emulsions and providing a good skinfeel.

Claim 1 has been amended to more sharply focus upon the underlying problem, namely the difficulty of thickening alpha-hydroxycarboxylic acids. Thus, claim 1 now recites the presence of an alpha-hydroxycarboxylic acid.

Comparative experiments have been provided in the Example section. These experiments all include the presence of an alpha-hydroxycarboxylic acid (AHA). Tables 1-2 illustrate the impotence at the 1% level of various polysaccharides and of different polymer thickeners. They do not provide an AHA system with a significant viscosity build. Tables 4-5 report viscosities achieved when various polysaccharides are combined with Sepigel® or Carbopol® in an AHA system. These combinations are relatively ineffective as compared to those of Aristoflex® whose results are reported under Table 6. With all of the polysaccharides, Aristoflex® provided a much better viscosity build in an AHA system.

Williams discloses an alpha-hydroxycarboxylic acid system thickened by xanthan gum, magnesium aluminum silicate and a polyacrylamide (e.g. Sepigel® 305). The Examiner has confirmed that this reference lacks the claimed taurate copolymers. Loffler et al. was cited for teaching taurate copolymers, especially ammonium acryloyldimethyltaurate/vinyl pyrrolidone (Aristoflex® AVC) as a thickener for oil-in-water emulsions. This reference lacks mention of polysaccharide gum co-thickeners. Beerse et al. was introduced as teaching Aristoflex® AVC in combination with xanthan gum and inorganic thickeners such as clays. Thus, the Examiner considered it would have been obvious to add the Aristoflex® AVC taught by Loffler et al. into the compositions of Williams because Beerse et al. teach the usefulness of Aristoflex® AVC, inorganic thickeners and xanthan gums as combinable materials.

Applicants do not dispute that the combination of taurate copolymers and polysaccharide gums were available to those skilled in the art as thickening systems. Yet these are not the only materials available to thicken and it is not obvious they would be particularly effective with alpha-hydroxycarboxylic acids (AHA). Not all combinations of thickeners lead to an optimum result. Applicants' comparative experiments have demonstrated the unexpected nature of combining different types of thickeners in the presence of an alpha-hydroxycarboxylic acid. Table 4 of the present specification demonstrates that Sepigel® 305 (a polyacrylamide) in combination with Keltrol® (xanthan gum) in the presence of 8% AHA achieves a viscosity of 10,000 cps at pH 2. By contrast, a combination of Aristoflex® AVC (a taurate copolymer) also in combination with xanthan gum and 8% AHA results in a viscosity of 18,700 cps at pH 2. See Table 6. Thus, the viscosity build at equal thickener concentrations is almost twice as much in the taurate copolymer/xanthan/AHA system than with that of the polyacrylamide/xanthan/AHA one. These results were unexpected.

Williams teaches the essential need for a polyacrylamide (Sepigel® 305). See column 2, lines 33-37. Loffler et al. describes Aristoflex® AVC (taurate copolymer) as a useful thickener for systems with pH range of 4 to 9. However, there is no disclosure that Aristoflex® AVC in combination with a polysaccharide would achieve any meaningful improvement in viscosity, and especially in AHA systems. There would be no incentive to therefore replace Sepigel® polyacrylamides with Aristoflex® taurate copolymers in the xanthan/AHA environment of Williams. Aristoflex® (taurate copolymers) would be just one of many possible Sepigel® substitutes. Nothing particularly special is disclosed about taurate copolymers that would give incentive for Sepigel® replacement.

Beerse et al. has an Example 3 (column 48) describing a hand sanitizer formulated with Aristoflex® AVC and xanthan gum at pH 3. No alpha-hydroxycarboxylic acid is present in that Example. Adjacent formulas replace the Aristoflex® with Sepigel® 305 (Example 2) and hydroxypropyl cellulose (Example 1). All of the aforementioned Examples are reported at column 49 (lines 24-29) to provide good anti-viral and anti-bacterial efficacy. No comment is provided with respect to thickening ability. Neither is there any mention of a problem as faced by applicants to improve the viscosity systems for alpha-hydroxycarboxylic acids. In fact, Beerse et al. provides no incentive or teaching that Aristoflex® (taurate copolymer) would show any benefit over Sepigel® (polyacrylamide) or Klucel HF (hydroxypropyl cellulose).

Applicants have shown the benefit of taurate copolymer in building viscosity for AHA systems. The presently claimed thickener system was shown to be much better than hydroxyethyl cellulose (Natrosol®) and Sepigel®. See the comparative experiments of the present specification. While it might be possible to combine thickeners found in the three references, there is no suggestion or teaching from these references that the improved result demonstrated by applicants would be achieved in the claimed combination.

In view of the foregoing amendment and comments, applicants request the Examiner to reconsider the rejection and now allow the claims.

Respectfully submitted,

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